Indiana Plant Materials Long Range Plan 2001-2005

I. Introduction

The mission of the Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The purpose of the Plant Materials Program is to: 1) assemble, test, and release plant materials for conservation use, 2) determine techniques for successful use and management of conservation species, 3) facilitate the commercial increase of conservation species, 4) provide for the timely development and transfer of effective state-of-the-art applied science technology to solve conservation problems, and 5) promote the use of plant science technology to meet the goals and objectives of the NRCS Strategic Plan.

The Indiana Plant Materials Long Range Program (LRP) identifies and prioritizes customer, resource, and program needs.

II. Long Range Plan Development

This LRP was developed in accordance with the revised National Plant Materials Manual, Part 540.01. This plan is to be used for directing plant materials activities within the state. This plan will be used along with the respective plans of the states within the service area to develop the Plant Materials Center LRP. This plan may also serve as a reference to develop specific action items that will be incorporated into Indiana's annual Business Plan.

The listing of identified customer, resource, and program needs, were developed by the State Plant Materials Committee. The Plant Materials Committee is comprised of a diverse group NRCS field and state office employees and other partners. See Appendix A for a listing of current committee members. Along with the input by the committee members, additional references were used to help identify and prioritize problems and needs. These are listed in Appendix B. Needs are categorized by NRCS Goals and Objectives as listed in the revised National Plant Materials Manual, Exhibit 539-1 (NRCS Goals and Objectives).

III. NRCS Objectives, Needs, Recommended Actions

A summary of problems, needs, and recommended actions are provided in Table 1. Details are provided in the following text.

NRCS Objective: Healthy Watersheds Providing Clean and Abundant Water

(1) **High Saline Sites -** There is a limited number of tested tolerant plant species that will grow on high saline sites in Indiana. There are many gas and oil wells in MLRA's 114, 115 and 120 and a high number of these active and abandoned sites are affected by brine damage. Pits used to store the brine-laden water have been breached resulting in lower lying adjacent small areas having high concentrations of brine where only very tolerant species survive. Because of a lack of vegetation, many of these sites have excessive erosion occurring with many sites having an annual loss of 10+ tons/acre.

Recommended Action: Use evaluation plots for determining saline tolerance of selected species as well as evaluating survivability of these potential species in Indiana growing conditions. Potential species are readily available by seed.

Priority: Medium

(2) **Alternative Grassed Waterway Species** - Degradation of water quality has occurred through excessive sedimentation from unstable areas. The area of concern is crop fields damaged from concentrated flow of surface water. Current and past agriculture practices have resulted in excessive gully erosion. Current plant materials are limited in wildlife benefits, non-native to the area, and could be aggressive by spreading to non-target areas. The need exists to identify native species that may be used to stabilize gully erosion and to provide secondary benefits such as wildlife habitat. In addition, establishment techniques for the identified species need to be investigated. Information pertaining to Grassed Waterways is found in FOTG and the Engineering Field Handbook, Chapter 7.

Recommended Action: Native species for use in grassed waterways need to be identified and evaluated. Establishment and management techniques need to be determined for the identified plant materials.

Priority: High

(3) **Shrubs for streambank protection** - Degradation of water quality has occurred through excessive sedimentation from unstable areas on streambanks. Shrub species suitable for streambank protection a should be identified, tested, and released for this purpose.

Recommended Actions: Complete evaluations of current shrub willow (*Salix spp.)* plantings for a potential plant materials release of this species.

Priority: High

NRCS Objective: Healthy and Productive Cropland

Carbon Sequestration – Degradation of soil quality has occurred through conventional tillage practices resulting in lower organic matter content, decreased water infiltration and poor tilth. The area of concern is crop fields that can be diverted into alternative cover. Native plant materials could be utilized for cover establishment, which can increase the amount of carbon in the soil. Establishment techniques for the identified species needs to be investigated and rates of carbon storage monitored.

Recommended Action: Identify and evaluate suitable plant materials for soil carbon storage. Establishment and management techniques need to be determined for the identified plant materials.

Priority: Medium

(2) **Vegetative Hedges** – Intensive cropping systems in Indiana are resulting in lower water infiltration, increased runoff, and reduced productivity. This results in significant damage to cropland each year caused by repeated ephemeral gully erosion. Customers are reluctant to install traditional

erosion control practices due to loss of crop acreage and cost. A need exists to find ways to slow water runoff, trap sediment, and stop ephemeral gully formation in these areas.

Recommended Action: Investigate the use of vegetative hedges in cropland settings and find native plants suitable to survive these conditions. When suitable plants are found, transfer this information to customers and provide technical guidance on application.

Priority: Medium

NRCS Objective: Healthy and Productive Wetlands

Wild Bamboo – *Arundaria gigantea* was once prevalent in Southern Indiana floodplain wetlands. This species could provide excellent wildlife habitat (e.g. swamp rabbit, a state endangered species) in in MLRA's 114,115, 120, 121, and 122.

Recommended Action: Collect *Arundinaria gigantea* and evaluate its potential for use in wetland restorations and wildlife habitat development on floodplain wetlands in southern Indiana.

Priority: High

NRCS Objective: High Quality Wildlife Habitat

(1) **Native Plants for Source Identification** – Native grasses (cool and warm season) and forbs are important for many wildlife species and are needed for ecological restorations such as CRP and WRP. Currently, native ecotypes are not available or they are too costly for producers to purchase.

Recommended Action: Investigate collaborating with other agencies (DNR, U.S. Fish & Wildlife Service, etc.) to develop a plan to collect and increase production of native species for source identification release.

Priority: High

(2) **Shrub Establishment** – Currently landowners are reluctant to establish shrubs on CRP lands. Seedlings may not be available and some landowners view the cost of planting shrubs as too expensive.

Recommended Action: Evaluate direct seeding methods of shrub species used for wildlife habitat and CRP. Develop an education program for the conservation partnership and the public.

Priority: Medium

(3) **Common Elderberry** – This plant Sambucus canadensis has potential to be released for wildlife habitat and streambank stabilization.

Recommended Action: Common elderberry (*Sambucus canadensis*) that was previously collected should be planted and tested to determine if this species should be released for wildlife habitat and streambank stabilization.

Priority: High

NRCS Objective: Healthy and Productive Grazing Lands

Forage Yields – There is a lack of production data on perennial forages based on soil type and fertility level statewide. There is a need for this data; to provide adequate yield tables, for Indiana's Forage Suitability Groups for the FOTG. These tables will be used to help determine stocking rates for Prescribed Grazing and for economical and production information. Present data was simulated from measured corn yields and is not accurate for forage production and does not account for varying fertility levels.

Recommended Action: Take yields on selected species of forages along with soil type and soil test or forage test to determine fertility level. This information for each species evaluated will be put into tables based on fertility level and forage suitability group. Where possible, crude protein, and digestible organic matter will also be collected via forage tests or fecal testing to evaluate forage quality with respect to livestock nutritional needs.

Priority: High

NRCS Objective: A Strong and Effective Grassroots Conservation Partnership

Invasive Plants – Currently some conservation partners are selling invasive plant species.

Recommended Action: Educate the conservation partnership to promote the sale and use of alternative native species.

Priority: High

(2) **Plant Materials Program Awareness** – The public and some conservation partners are unaware of the plant materials program and activities.

Recommended Action: Develop educational materials on the Plant Materials Program.

Priority: High

(3) **Soil Bioengineering** – Soil bioengineering is not well understood or used in Indiana.

Recommended Action: Provide awareness training on soil bioengineering techniques to partnership employees at area meetings.

Priority: Medium

Appendix A. Listing of State Committee Members

Chairman: Ken Collins, Chairman, NRCS Forester, Indianapolis, IN (317) 290-3200 ext. 356
Members: Andrew Brown, IDNR Agriculture Conservation Specialist, Rockville, IN (765) 569-3551
Ruth Hackman, NRCS Soil Conservationist, Brownstown, IN (812) 358-2367
Ellen Jacquart, The Nature Conservancy Botanist, Indianapolis, IN (317) 923-7547
Darrel McGriff, Earth Team Volunteer, (765) 662-8260
James Norris, IDNR Resource Specialist, Winchester, IN (765) 584-1141
Doris Scully, NRCS Resource Conservationist, Spencer, IN (812) 829-2605
Susannah Hole, NRCS Grassland Conservationist, North Vernon, IN (812) 346-3411
Theresa Wojkovich, NRCS Resource Conservationist, LaPorte, IN (219) 324-6303
Native American Liason: Darrel Lambert, NRCS, Soil Conservationist, Bluffton, IN (219) 824-1930
Plant Materials Specialist: Dave Burgdorf, NRCS, East Lansing, MI (517) 324-5242
Rose Lake Plant Materials Center:
John Rissler, Manager, NRCS, East Lansing, MI (517) 641-6300
Tony Bush, Agronomist, NRCS, East Lansing, MI (517) 641-6300
Sergio Perez, Biological Technician, NRCS, East Lansing, MI (517) 641-6300
SWCD Plant Sale Subcommittee: Kim Wininger, Chairman, Indiana Division of Soil Conservation

Table 1. Summary of Needs and Actions Taken

Problem	Plant Materials Needs	Ranking Priority and Status	Action Planned		
			Evaluate Existing Technology	Transfer Existing Technology	Develop New Technology/ Plant Release
NRCS Objective: Healthy Watersheds Providing Clean and Abundant Water					
High Saline Sites	Salt tolerant plants	Medium Active	X	X	
Alternative grassed waterways species.	Plants that establish quickly and provide permanent cover in concentrated flow areas.	High Active	X	X	X
Shrubs for streambank protection.	Plants (shrubs) for streambank restoration.	Medium Active	X	X	X
NRCS Objective: Healthy and Productive Cropland					
Carbon Sequestration	Plants that improve soil carbon storage.	Medium New	X	X	X
Vegetative Hedges	Plants that can be used to control erosion.	Medium Active	X	X	X
NRCS Objective: Healthy and Productive Wetlands					
Wild Bamboo	Arundaria gigantea to be used for wetland restorations.	High New	X	X	X
NRCS Objective: High Quality Wildlife Habitat					
Native plants for source identification.	Native plant species for restorations (CRP, WRP, etc.)	High Active	X	X	X
Shrub establishment.	Shrubs suitable for direct seeding.	Medium New	X	X	X
Common Elderberry	Test and evaluate this species for wildlife habitat and streambank protection.	High Active	X	X	X
NRCS Objective: Healthy and Productive Grazing Lands					
Forage Yields	Forage yields on various soils types needs to be determined.	High Active	X		
NRCS Objective: A Diverse and Well-Served Customer Base					
Invasive Plants	Curtail sale of invasive plants by conservation partners.	High Active	X	X	
Plant Materials Awareness	Increase awareness of the plant materials program to the public and conservation partnership.	High Active	X	X	
Soil Bioengineering	Increase the use of soil bioengineering.	Medium Active	X	X	